lished communication was to the *Messenger of Mathematics* in 1863, "on the variations of the node and inclination of a disturbed planet deduced from the lunar equation of latitude." Some further papers were published in the same periodical, in the *Proceedings* of the Cambridge Philosophical Society, and in volumes of the *Monthly Notices* from 1872 to 1892. These included observations of *Saturn's* ring, and occultations of stars by the Moon, and an interesting paper on a graphic conversion of stellar coordinates. In 1878 he published with notes a translation of Fourier's "Analytical Theory of Heat," which was produced by the Cambridge University Press. He also edited the third edition of Cheyne's *Planetary Theory*.

From 1880 to 1882, during the illness of the late Professor Challis, Mr. Freeman was appointed as his deputy, and he lectured for him on "Practical Astronomy and the use of Astronomical Instruments." On two occasions Mr. Freeman examined for the Smith's prize.

In 1882 Mr. Freeman married the daughter of Colonel Paterson, of the Buffs, and soon after that he was appointed Rector of Murston, near Sittingbourne, in Kent, which position he held until his death. Here he was greatly respected, and his kind, courteous and amiable manner made him a great favourite in the neighbourhood. He had always hoped to obtain an astronomical appointment, which would have been so congenial to his tastes, but in this he was unsuccessful.

He was a great reader and a hard-working man, and was always engaged in some astronomical work. He possessed an observatory with a $6\frac{1}{2}$-inch refractor, by Grubb, with which he spent the happiest hours of his life. About three years ago Mr. Freeman fainted while on a visit to the Archbishop of Canterbury, at Addington, and was compelled to take a three months' rest. He still, however, insisted on working hard, with the result that in 1897 March he had another prostration, from which he never recovered, and was confined to his room till June, when he died. This long and painful illness was borne most uncomplainingly, and throughout it he did all he could for his parish and for the large school of 400 children attached to his church. Mr. Freeman has left a widow and four children—three daughters and a boy.

He was elected a Fellow of the Society 1864 January 8.

William Godward was born in 1829 at Wakefield, where his father was a schoolmaster. At the age of eighteen he entered the *Nautical Almanac* Office, where his father and his uncle (William and John Godward) were at that time also serving, under Lieutenant Stratford; and he remained there for the long period of forty-three years, being appointed to the Chief Assistantship in 1869 on the retirement of Mr. Richard Farley. Among several improvements contributed by him to the *Nautical Almanac* may be specially mentioned his interpolation tables, which superseded others of a much more laborious character, and

are still in use ; as are also his improved elements of *Ceres*, given in the only paper he ever contributed to this Society (*Monthly Notices*, vol. xxxviii. p. 119). In 1866 he published his "Auxiliary Tables for Computing an Approximate Ephemeris of a Minor Planet." He retired from office on account of the age-limit in 1890, and died on 1897 May 19.

He was elected a Fellow of the Society on 1872 January 12.

ADAM HILGER was born in Darmstadt in 1839, and in his early youth he showed a marked inclination for the mechanical work in which his father was then engaged. For some years he worked as a mechanical engineer in the Mint at Darmstadt, and afterwards entered Ertel's famous establishment at Munich. He next came to London, but soon left for Paris, where he had the good fortune to find employment with the firm of opticians, Lerebours & Secretan. During this engagement he constructed many instruments under the direct supervision of Foucault, and became acquainted with the theory as well as the practice of his art. After the war of 1870 he came to London, and became foreman with Mr. John Browning. Having completed a five years' contract he began business on his own account in Stanhope Street.

In the early memoirs of the pioneers in celestial spectroscopy both at home and abroad, references to Hilger's name are frequently to be found. He supplied many of the instruments with which the researches were carried out, thus gaining reputation and experience which he never ceased to increase. At the time of his death he was engaged upon work for all parts of the world, and his loss will be widely felt. He was always ready to undertake new work in which special difficulties had to be met, and he brought to it not only a wide practical experience but also an eager and active habit of mind. He paid special attention to the cutting and working of quartz and Iceland spar prisms, and had lately made very successful achromatic combinations of lenses, in which only natural crystals were used, and which were specially suitable for work with ultra-violet light.

Amongst many other matters which had engaged his time and thoughts, we may refer to one in particular in the hope that it may receive further attention and be brought to perfection—viz. a form of governor for controlling clockwork in cases where there are considerable variations in the power or the load.

Mr. Hilger died on 1897 April 23, at Brighton, from the effects of a bicycle accident.

He was elected a Fellow of the Society on 1892 February 10.

JOSEPH MAGUIRE was born at Corstoon, Drumconrath, co. Meath, in or about the year 1800. [The register of his birth cannot be found. He himself believed that he was a centenarian, but evidence, collected after his death, points to the conclusion that his age was ninety-six.] He died on 1896 April 8 at his